

**Elyria Site
NOx from Dried Precipitated Powders
Action Plan and Business Impact**



May 6, 2016

Background

- After the December 2015 production of Cu 6081 revealed that calcination can produce NO_x, other dried material calcined on the North end calciners were evaluated
- Actual NO_x emission data was produced and reported by a third party
- Filtration and washing do not eliminate the potential for NO_x generation in these products
- These calciners are not currently permitted for NO_x and do not have equipment to control the potential NO_x emissions

Regulatory Requirements

- A source would be *de minimis* if it has the **potential** to emit less than ten pounds per day. A permit modification would **not** be required but there must be supporting documentation to prove the daily potential emissions.
- A self imposed reduction of production rates is possible to meet the *de minimis* limit and would **not** require a permit modification. Documentation must be maintained to prove the reduced rates were maintained and daily emissions met the *de minimis* limit.
- A source can have a potential to emit of 10 ton/year for a criteria pollutant (which NO_x is) before control equipment must be installed. A permit modification would be required

The site currently has the testing data to prove the potential daily NO_x emissions are above the *de minimis* limit, therefore self imposed rate reductions are required in order

Short Term Plan Reduced Production Rates

- Implement reduced production rates to achieve *de minimis* level of less than 10 pounds per day
 - Rate reductions range from minimal to 30% reduction
 - Site will have to maintain records demonstrating compliance with lower production rates
 - Plan is to start production at reduced rates the week of May 9th with steady state expected by May 16th – May 23rd

Calcined CuCr Powder	Finished Product	Anticipated Overall Throughput Change
Cu 1800 P	Cu 1800 P	Minimal
Cu 1803 P	Cu 1808 T1/8 Shell	Minimal
Cu 1820 P	Cu 1886P (when blended with Cu 1885P)	30% Decrease
Cu 1885 P	Cu 1885 P and Cu 1886 P (when blended with Cu 1820 P)	30% Decrease
Cu 1950 P	Cu 1950 P	30% Decrease
Cu 1955 P	Cu 1955 P	30% Decrease
Cu 0396 P	Cu 0396 P	30% Decrease
Cu 1160 P	Cu 1230 E 1/16 3F RS; Cu 1155 T 3/16 RL; Cu 1155 T 3/16X1/8 RL	Minimal
Cu 1136 P	Cu 1132 T 1/8	Minimal

Short Term Plan Additional Actions

- **Internal movement of products -**
 - Utilize Copper Calciner #2 for non-NOx products
 - Cu oxide precursors, Cu-0202 P, Cu-0203 T precursors
 - Calciner will be <25% utilized with these products only
 - Explore capital to move Catoxid to Calciner #2 from south end. This would get all chrome products to north end and address utilization of Calciner #2.
 - All NOx-generating non-Cr powders to be calcined on RC5 w/Trimer scrubber: Cu-6081, Cu-5020 / FT-BYD, and precursor for X-540 T
- **Continue qualifying NOx generating non-Cr products with toller PPT**
 - Cu-6081 – already qualified and producing
 - Cu-5020 / FT-BYD, and X-540T powder precursor – qualification work in progress; high likelihood of success
 - Chrome products will not be qualified with PPT
 - PPT has no experience with the chrome regulation and they have less than adequate dust control
- **Review products in Erie that may also have the potential to emit NOx**

Long Term Plan

- Reduced production rates are not the sustainable solution
- The site will need capital to install control equipment for the NOx emissions
- Permit modification would be required for control equipment
- Resources from NCE will need to be engaged to work on the project

The site will request capital for best available technology control equipment

Business Impact

- Cu-6081 – No impact. Toller will produce
- Cu-0396 –
 - Due to make in May and send to Erie for further processing
 - No firm order yet – only forecast
 - Will finish by the end of May and ship to Erie first week of June
- Cu-1885P –
 - No firm order – forecast only
 - Forecasted order due 8/1
 - Will ship ~ 2 weeks late
- No other delivery dates are impacted
- **Need to explore building inventory on key products while volumes are down to be prepared for when volumes increase and plant is operating at limited rates**